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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,921	03/31/2004	Po-Hung Yau	BHT-3111-444	5691
7590 05/18/2006			EXAMINER	
BRUCE H. TROXELL SUITE 1404 5205 LEESBURG PIKE FALLS CHURCH, VA 22041			NGUYEN, JOSEPH H	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/812,921

Applicant(s)

YAU ET AL.

Examiner

Joseph Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213..

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 5, 8, 12, 18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 8, 12, 18 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 6,610,598) in view of Yatsuda et al. (US 2004/0251469).

Regarding claim 1, Chen discloses in figures 6-7 (showing the same embodiment) a planar package structure for higher power light emitting diode comprising a substrate 1; a package material 5; a light emitting diode chip 3 having a main light emitting surface providing a light source (col. 2, lines 11-16); and a planar optical modulation unit 6A comprising a lens and having a plane appearance under the naked eye (col. 3, lines 26-28) disposed on the package material so that the planar optical modulation unit 6A is above the main light emitting surface, and utilized for modulating the optical phase of the light source (col. 2, lines 11-21). Chen does not disclose a light emitting diode chip is in direct contact with the substrate. However, Yatsuda et al. discloses in figure 2 a light emitting diode chip 2 (para [0037], line 7) is in direct contact with the substrate 3a (para [0038], line 1). Note that element 3a is a metal on which the light emitting diode chip 2 is formed. Therefore, element 3B can function as a substrate. In view of such teaching, it would have been obvious at the time of the

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present invention to modify Chen by having a light emitting diode chip being in direct contact with the substrate to effectively dissipate heat away from the LED chip 3 since the LED chip 3 is direct contact with an excellent heat conduction metal 3a (para [0038], lines 1-4, Yatsuda et al.).

Regarding claim 5, Chen discloses in figure 12 a planar modulation unit 6D configured to perform a diffractive optical phase modulation (col. 3, lines 44-49).

Regarding claim 18, the combination of Chen and Yatsuda et al. would include substantially all of a surface of the substrate 3a of Yatsuda et al. underlying the planar optical modulation unit 6a of Chen and being substantially parallel to a surface of the planar optical modulation unit therein.

Claims 8, 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 6,610,598) and Yatsuda et al. (US 2004/0251469).

Regarding claim 8, similar to claim 1 above, Chen (US 6,610,598) and Yatsuda et al. disclose substantially all the structure set forth in claim 8 except the light emitting diode chip and planar optical modulation unit provided in plurality. However, it would have been obvious at the time of the present invention to modify Chen and Yatsuda et al. by having the light emitting diode chip and planar optical modulation unit provided in plurality, since it has been held that mere duplication of the essential parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claim 12, Chen discloses in figure 12 a planar modulation unit 6D configured to perform a diffractive optical phase modulation (col. 3, lines 44-49).

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Regarding claim 19, the combination of Chen and Yatsuda et al. would include substantially all of a surface of the substrate 3a of Yatsuda et al. underlying the planar optical modulation unit 6a of Chen and being substantially parallel to a surface of the planar optical modulation unit therein.

### ***Response to Arguments***

Applicant's arguments filed on 02/27/2006 have been fully considered but they are not persuasive.

With respect to claims 1 and 8, applicant argues Chen does not teach or suggest a planar optical modulation unit and a light emitting diode chip in direct contact with the substrate. However, Chen clearly discloses in figures 6-7 and in col.3, lines 26-28 element 6a has a lens and a plane appearance under the naked lens disposed on the package material 5. As such, element 6a can be construed as "planar optical modulation unit". Further, as explained in rejection of claims 1 and 8 above, Yatsuda et al. discloses in figure 2 a light emitting diode (LED) chip 2 is in direct contact with substrate 3 formed of a metal such that heat generated in the LED chip can be effectively dissipated since the LED chip is in direct contact with an excellent heat conduction metal 3a (para [0038], lines 1-4, Yatsuda et al.). With such a strong motivation, the combination of Chen and Yatsuda et al. would read on claims 1 and 8. It is also noted in claim 8, having the LED chip and planar optical modulation unit provided in plurality is the mere duplication of the essential parts of a device and involves only routine skill in the art. *St. Regis paper Co. vs. Bemis Co.*, 193. USPQ 8.

With respect to new claims 18 and 19, the combination of Chen and Yatsuda et al. would include substantially all of a surface of the substrate 3a of Yatsuda et al. underlying the planar optical modulation unit 6a of Chen and being substantially parallel to a surface of the planar optical modulation unit therein.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Conclusion***

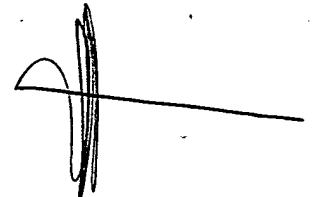
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (571) 272-1734. The examiner can normally be reached on Monday-Friday, 7:30 am- 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on (571) 272-2298. The fax phone number for

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the organization where this application or proceeding is assigned is (571) 273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JN  
April 26, 2006.

A handwritten signature in black ink, consisting of a stylized 'K' followed by a horizontal line extending to the right.

**KENNETH PARKER**  
**SUPERVISORY PATENT EXAMINER**